Maxwell Gualtieri

202-215-8774 | MaxGualtieri2026@u.Northwestern.edu | 3515 Yuma St. NW Washington, D.C.
https://www.linkedin.com/in/maxwell-gualtieri-57a66a174/

Education

Northwestern University, Evanston, IL **Expected June 2026**
Bachelor of Science, Mechanical Engineering **GPA 3.61/4.0**
Segal Design Certificate
- Relevant Coursework: Vehicle Dynamics and Design, Theory of Machine Dynamics, Ordinary Differential Equations, Embedded Programming (Python), Mechatronics, Fluid Mechanics, Design Sketching

Language and Culture in Southern France, Montpellier, France **September – December 2024**
Semester Abroad

Experience

Stellantis, Detroit, MI **June – August 2024**
Manufacturing Engineering Intern
- Designed custom tooling for the general assembly maintenance department including robot components, end of arm tooling, and handheld tools. Ran FEA on consumable tooling and used GD&T to create engineering drawings.
- Designed and deployed a robot component that created yearly savings of $500,000 in non-OPE technical reduction.
- Completed make-buy analysis for non-production material. Contacted suppliers and analyzed fabrication costs to find a 57% savings over 100 tools. Worked closely with the toolmaker shop to identify insourcing feasibility.
- Selected for the StarUp intrapreneurship challenge. Worked with designers to deliver innovative product solutions.

Northwestern Formula Racing, Evanston, IL **September 2023– Present**
Part Designer
- Suspension subteam designer tasked with the design and fabrication of the NFR 2025 wheel hubs.
- Led the design and fabrication of the uprights for the NFR 2024 car. Employed SolidWorks CAD for precise design and FEA for structural analysis. Used MATLAB force calculations to optimize strength and weight.
- CAM programmed using Autodesk Fusion 360 then CNC manufactured uprights using a 3-axis mill.

No-Slip Grip, Evanston, IL **January – March 2023**
Project Manager
- Collaborated with Alexian Brothers Rehabilitation Hospital to design an adaptive golf grip for users with brain hemorrhaging. Focused on comfort, control, and safety, refining the design through direct user feedback.

Research

Great Lakes Observation System (GLOS), Ann Arbor, MI **March – June 2024**
Research Consultant
- Identified underserved, climate-vulnerable communities in the Great Lakes region poised to benefit from GLOS-monitored observational buoys and data collection towers.
- Gathered insights from over 80 stakeholders, including government officials, researchers, and community members.
- Developed a custom mapping tool using national indices such as FEMA RAPT, Justice 40 Screening Tool, and CDC EJI to pinpoint target communities. This tool accounts for a comprehensive range of factors and will be used by GLOS for future community identification projects.

American University, Washington, D.C. **May – December 2023**
Department of Mathematics and Statistics Researcher Under Dr. Michael Robinson
- Co-author of the paper *Topological and Geometric Characterization of Synthetic Aperture Sonar Collections.*
- Developed programming skills and utilized MATLAB to simulate circular synthetic aperture sonar data, seamlessly integrating simulated data with real-world experimental data. Used MATLAB to craft target images from point cloud sonar data and achieve a practical grasp of data visualization.
- Created complexes and persistence diagrams with Topological Data Analysis using the Python Gudhi Library, provided valuable insights into complex datasets, highlighting a hands-on approach to mathematical applications.

Skills & Interests

Proficiencies: SolidWorks, Nx, OnShape, Autodesk Fusion 360, Python, MATLAB, MS Office, Design Sketching, CNC Mill
Additional Interests: French, Painting, Hiking, Basketball, Soccer, Catan